INDESSE Industry

VCP-03-…-TO, VCP-03-…-TP,

VCP-03-…-HO, VCP-03-…-HP,

VCP-03-…-EO, VCP-03-…-SO

User's Manual
INSTALLATION

1. BEFORE YOU BEGIN

Symbols are used in the user's manual to improve your orientation.
The following table includes their graphical images and meanings:

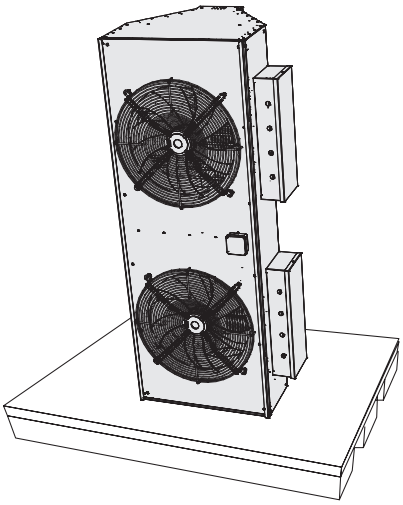
Symbol	Meaning
ATTENTION!	Warning or note
DO NOT OVERLOOK!	Important instructions
YOU WILL NEED	Practical tips and information
Technical information	More detailed technical information
	Reference to another part/section of the user's manual

Before installation, thoroughly study the part **Safe use of air curtains**, where you will find all the instructions for the safe and correct use of the product.

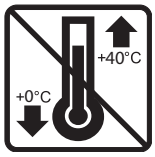
This user's manual includes important instructions for the correct installation of an air curtain. Carefully read and adhere to all the following instructions before installing the air curtain! The manufacturer reserves the right to make changes including the technical documentation without prior notice. Keep the user's manual for future use. Consider the instructions in the user's manual as a part of the product.

Statement of compliance
The declaration of conformity for the **INDESSE** *Industry* air curtains can be found at www.2vv.cz

2.1 CHECK THE DELIVERY

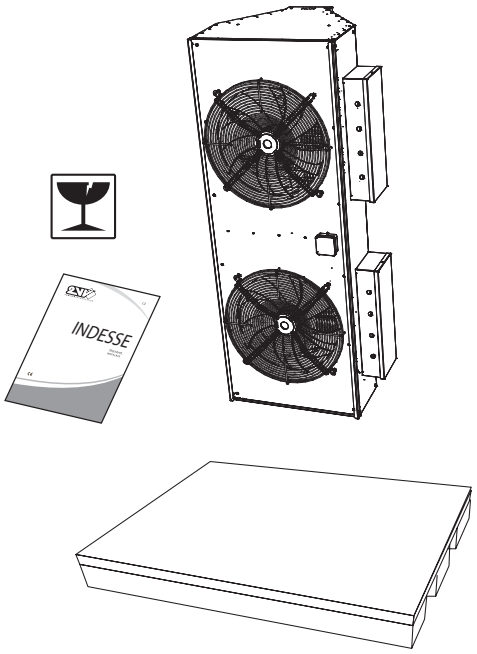


- Check immediately after delivery that the packed product has not been damaged. If the packaging is damaged inform the carrier. If the complaint is not lodged in time, no future demands can be claimed.
- Check that the product type is the same as you ordered. In the case of an irregularity do not unpack the air curtain and immediately report the fault to the supplier.
- After unpacking, check that the air curtain and other parts are in order. If in doubt contact the supplier.
- Never install a damaged air curtain!
- If you are not going to unpack the air curtain immediately after delivery, it must be stored in a dry indoor environment with an ambient temperature between **+0 °C and +40 °C**.



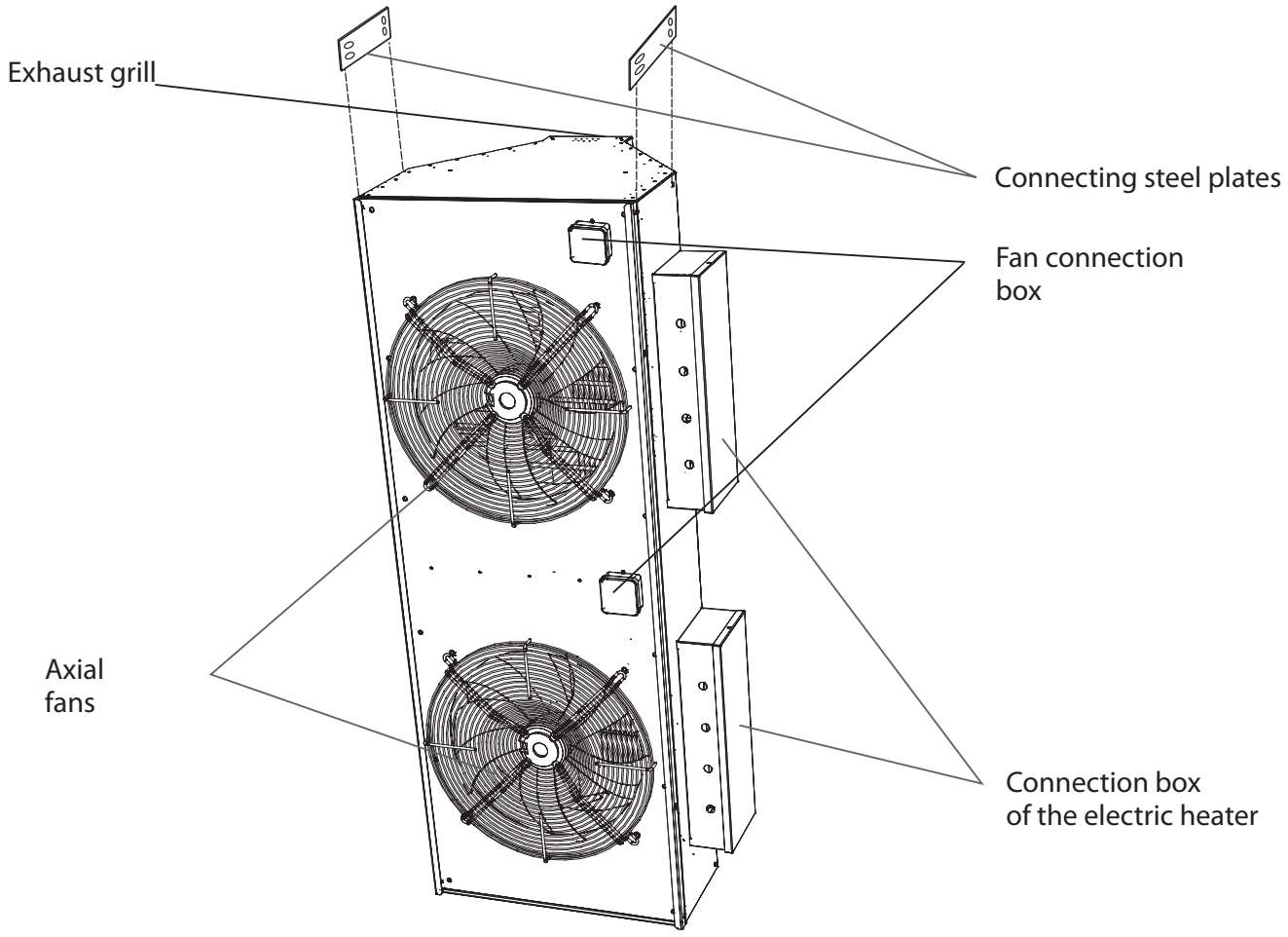
	All used packaging materials are ecological and can be reused or recycled. Actively contribute to the protection of the environment by properly disposing of and recycling packaging materials.	

2.2 UNPACK THE AIR CURTAIN



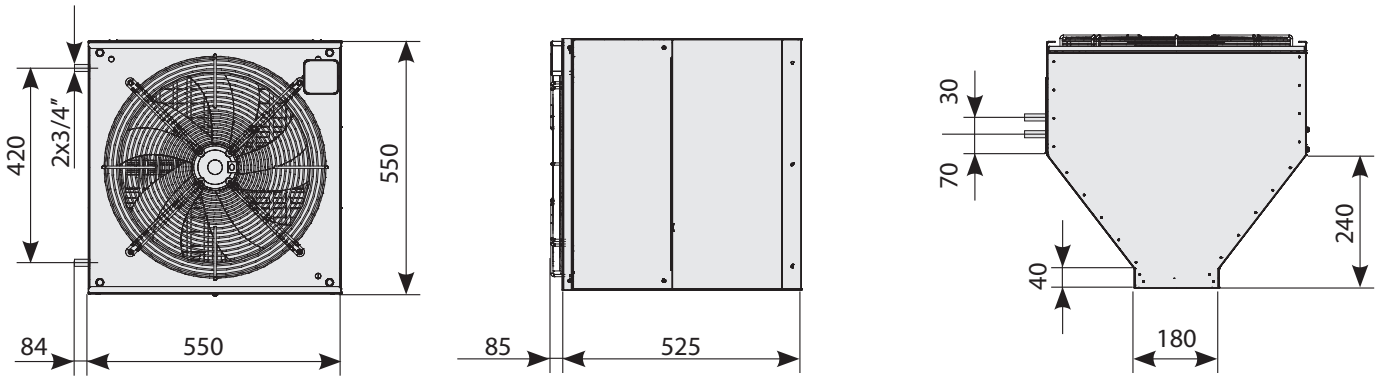
- If the air curtain was transported in temperatures lower than 0 °C, it is necessary, after unpacking, to leave it turned off in operational conditions for at least **2** hours so that the temperature inside the air curtain can balance itself out.

3. MAIN PARTS



4. DIMENSIONS

VCP-03-055-HO/TO



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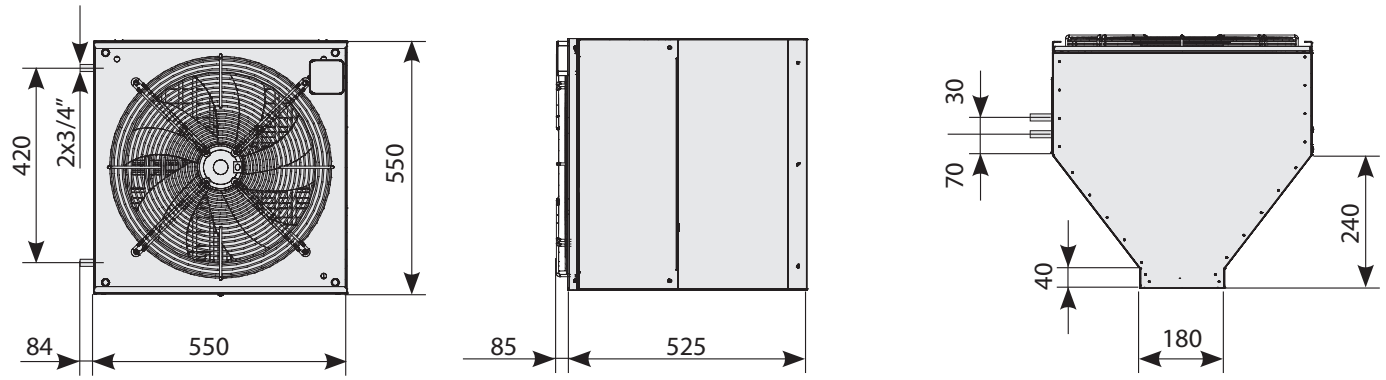
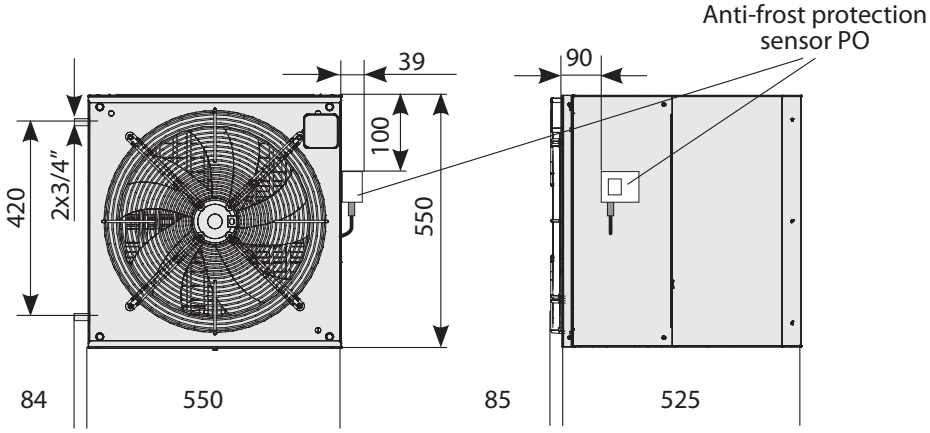
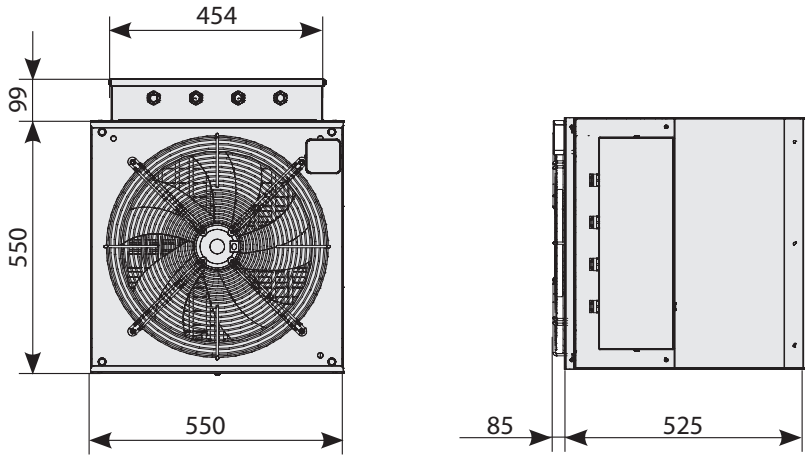


VCP-03-055-HP/TP

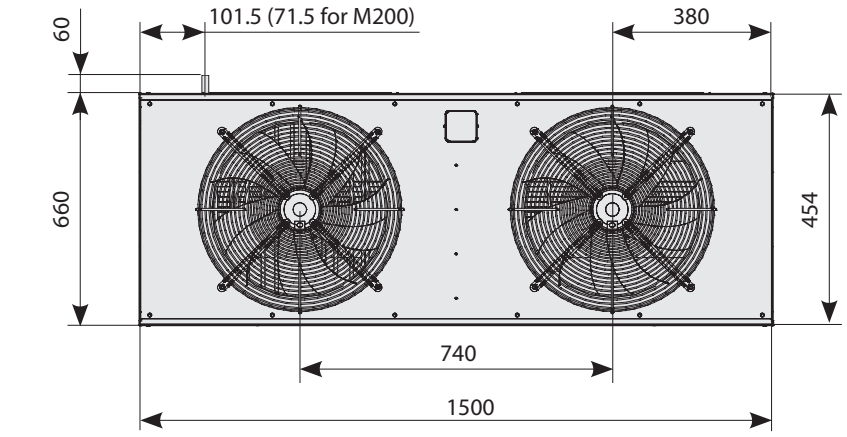


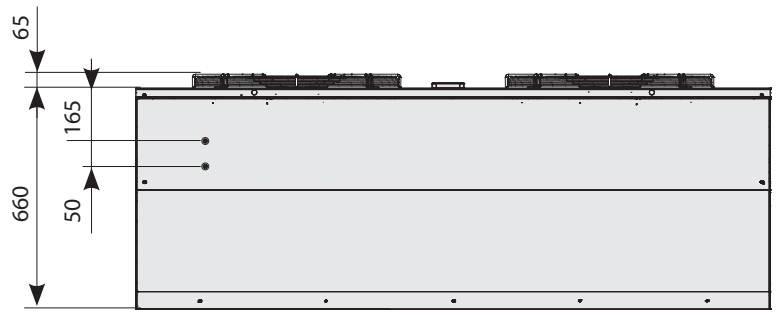
VCP-03-055-EO



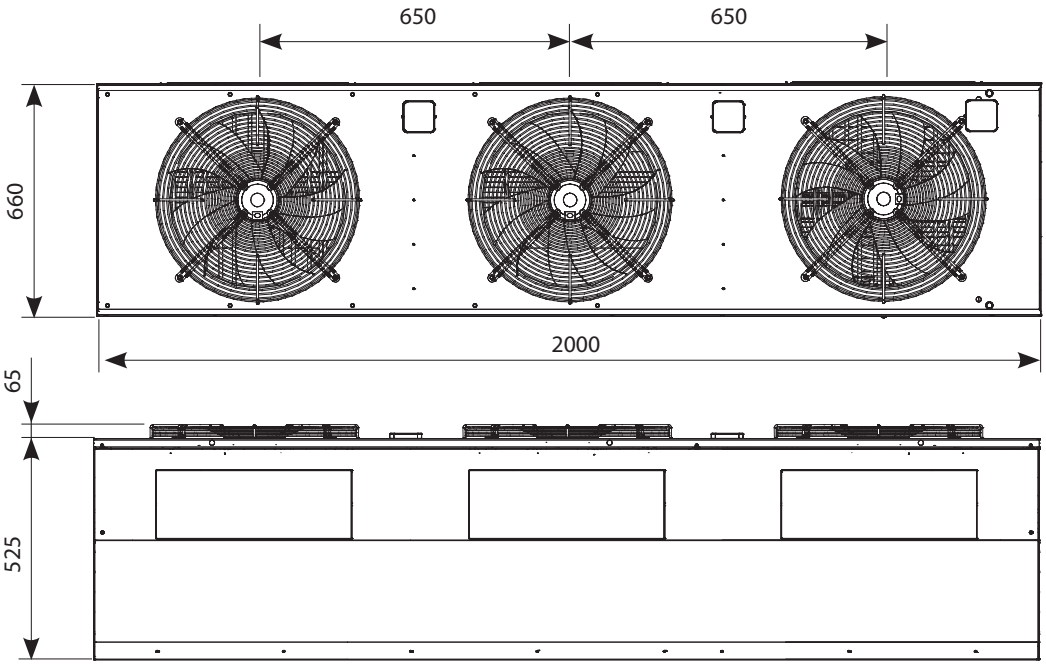
4. DIMENSIONS

VCP-03-150-TO/HO





VCP-03-200-SO



Type of curtain	Afterblow*	Air power	Noise**	Heater power	Heater power supply	Fan power supply	Weight
	[m]	[m³/h]	[dB(A)]	[kW]	[V/A]	[V/A]	[kg]
VCP-03-055-T..	6	2650	72	11.4***	-	400/0.65	23
VCP-03-055-H..		2650	72	11.6****	-	400/0.65	23
VCP-03-055-E..		3250	70.2	6	400/9	400/0.65	23
VCP-03-055-S..		3500	70.5	-	-	400/0.65	21
VCP-03-150-T..	6.5	5250	70	23.8***	-	400/1.30	49,5
VCP-03-150-H..		5250	70	30.43****	-	400/1.30	49,5
VCP-03-150-E..		6350	68	12	400/18	400/1.30	49,5
VCP-03-150-S..		6600	68	-	-	400/1.30	47
VCP-03-200-T..	7	8100	69	35.86***	-	400/2.0	65,6
VCP-03-200-H..		8100	69	45.57****	-	400/2.0	65,6
VCP-03-200-E..		10000	67	18	400/27	400/2.0	65,6
VCP-03-200-S..		10200	67	-	-	400/2.0	63,6

* Distance at which the median speed of the air current falls to 2 m/s. Under ideal conditions and max. power of the equipment.
** Acoustic pressure at a distance of 3m from the curtain.
*** At a water temperature gradient of 90/70°C and at an incoming air temperature of +15°C.
**** At a water temperature gradient of 130/70°C and at an incoming air temperature of +15°C.

Curtains with an electric heater

Type of curtain	Air power	Heater power	Temperature at exhaust Δt
	[m³/h]	[kW]	[°C]
VCP-03-055-EO	3250	6	4.5
VCP-03-150-EO	6350	12	4.9
VCP-03-200-EO	10000	18	4.9

Curtains with a water heat exchanger for a water temperature gradient of 60/40°C at an incoming air temperature of +15°C.

Type of curtain	Air power	Heating output	Temperature at exhaust	Water flow rate	Pressure loss
	[m³/h]	[kW]	[°C]	[l/s]	[kPa]
VCP-03-055-T..	2650	4.30	19.70	0.05	0.29
VCP-03-150-T..	5250	12.18	21.80	0.14	1.47
VCP-03-200-T..	8100	18.22	21.60	0.22	1.37

5. TECHNICAL PARAMETERS

Curtains with a water heat exchanger for a water temperature gradient of 70/50°C and an incoming air temperature of +15°C.

Type of curtain	Air power	Heating output	Temperature at exhaust	Water flow rate	Pressure loss
	[m^3/h]	[kW]	[°C]	[l/s]	[kPa]
VCP-03-055-T..	2650	6.63	22.30	0.08	0.58
VCP-03-150-T..	5250	16.76	24.30	0.20	2.45
VCP-03-200-T..	8100	25.13	24.10	0.35	2.25

Curtains with a water heat exchanger for a water temperature gradient of 80/60°C and an incoming air temperature of +15°C.

Type of curtain	Air power	Heating output	Temperature at exhaust	Water flow rate	Pressure loss
	[m^3/h]	[kW]	[°C]	[l/s]	[kPa]
VCP-03-055-T..	2650	9.01	24.90	0.11	0.98
VCP-03-150-T..	5250	21.31	26.90	0.26	3.72
VCP-03-200-T..	8100	31.97	26.50	0.38	3.33

Curtains with a water heat exchanger for a water temperature gradient of 90/70°C and an incoming air temperature of +15°C.

Type of curtain	Air power	Heating output	Temperature at exhaust	Water flow rate	Pressure loss
	[m^3/h]	[kW]	[°C]	[l/s]	[kPa]
VCP-03-055-T..	2650	11.40	27.60	0.13	1.47
VCP-03-150-T..	5250	25.87	29.40	0.31	5.00
VCP-03-200-T..	8100	38.86	29.00	0.47	4.60

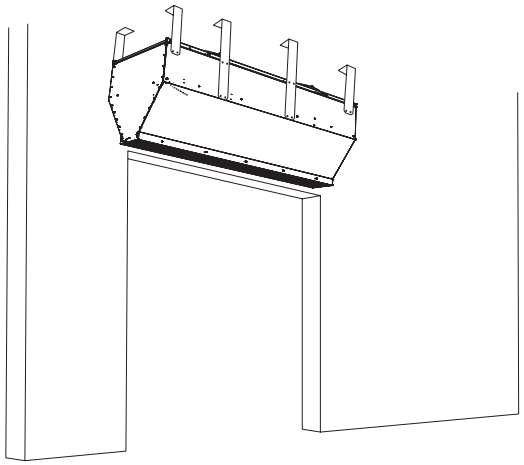
Curtains with a water heat exchanger for a water temperature gradient of 130/70°C and an incoming air temperature of +15°C.

Type of curtain	Air power	Heating output	Temperature at exhaust	Water flow rate	Pressure loss
	[m^3/h]	[kW]	[°C]	[l/s]	[kPa]
VCP-03-055-H..	2650	11.60	27.80	0.04	0.20
VCP-03-150-H..	5250	30.43	32.00	0.12	1.00
VCP-03-200-H..	8100	45.57	31.50	0.18	0.90

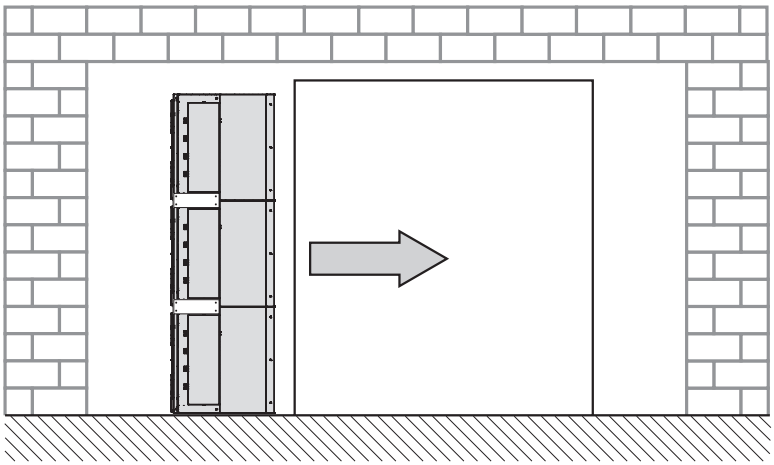
The warm water heat exchangers (type TO, TP) made from Cu/Al materials are intended for a max. operating water temperature of +100°C and a max. operating pressure of 1,6 MPa.
The hot water heat exchangers (type HO, HP) made from Cu/Al materials are intended for a max. operating water temperature of +130°C and a max. operating pressure of 1.6 MPa.

6.1 CHOOSE AN INSTALLATION LOCATION

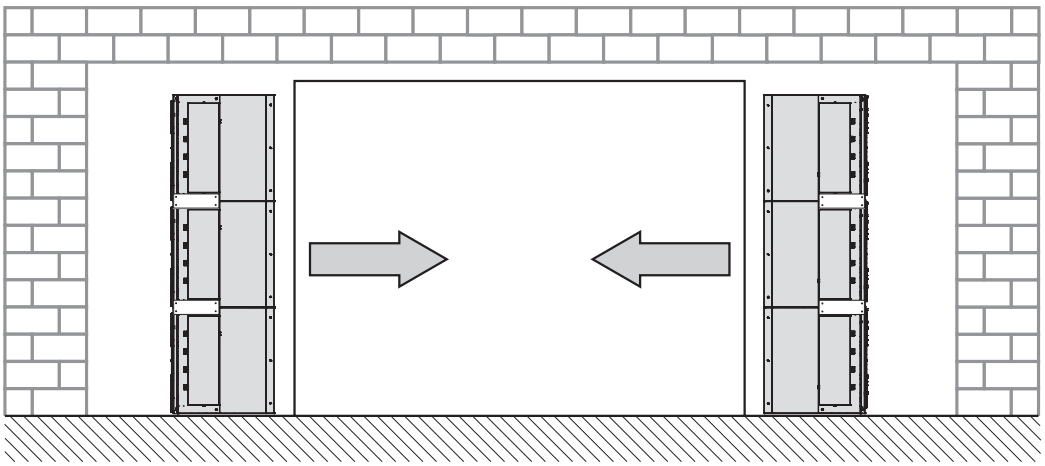
Horizontal installation



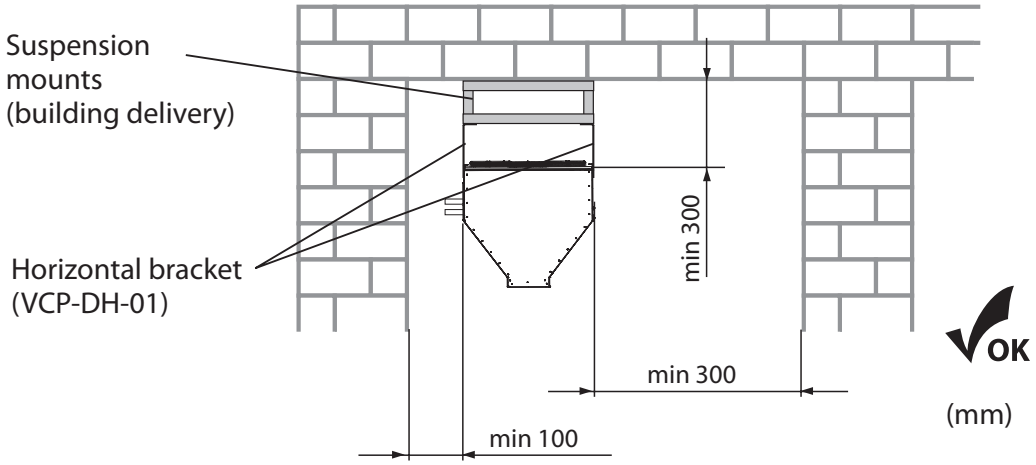
Vertical installation



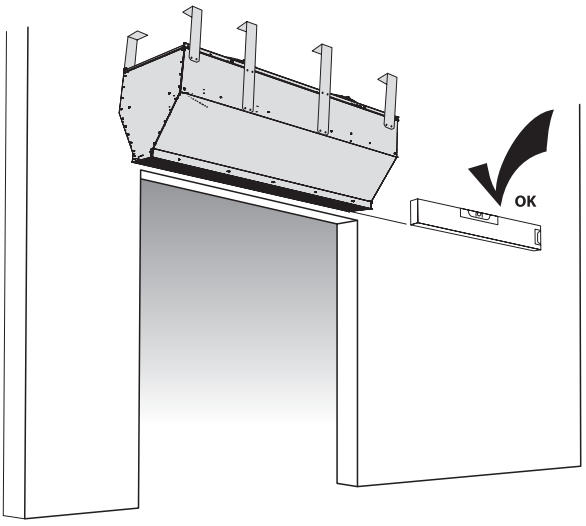
Double-sided vertical installation

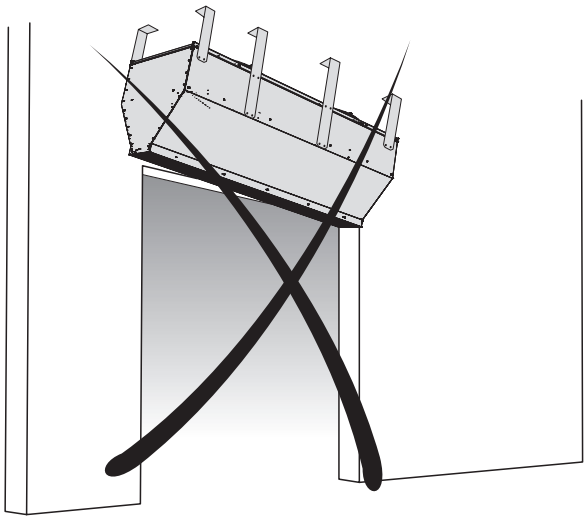


6.1-1 Build-in dimensions – horizontal installation

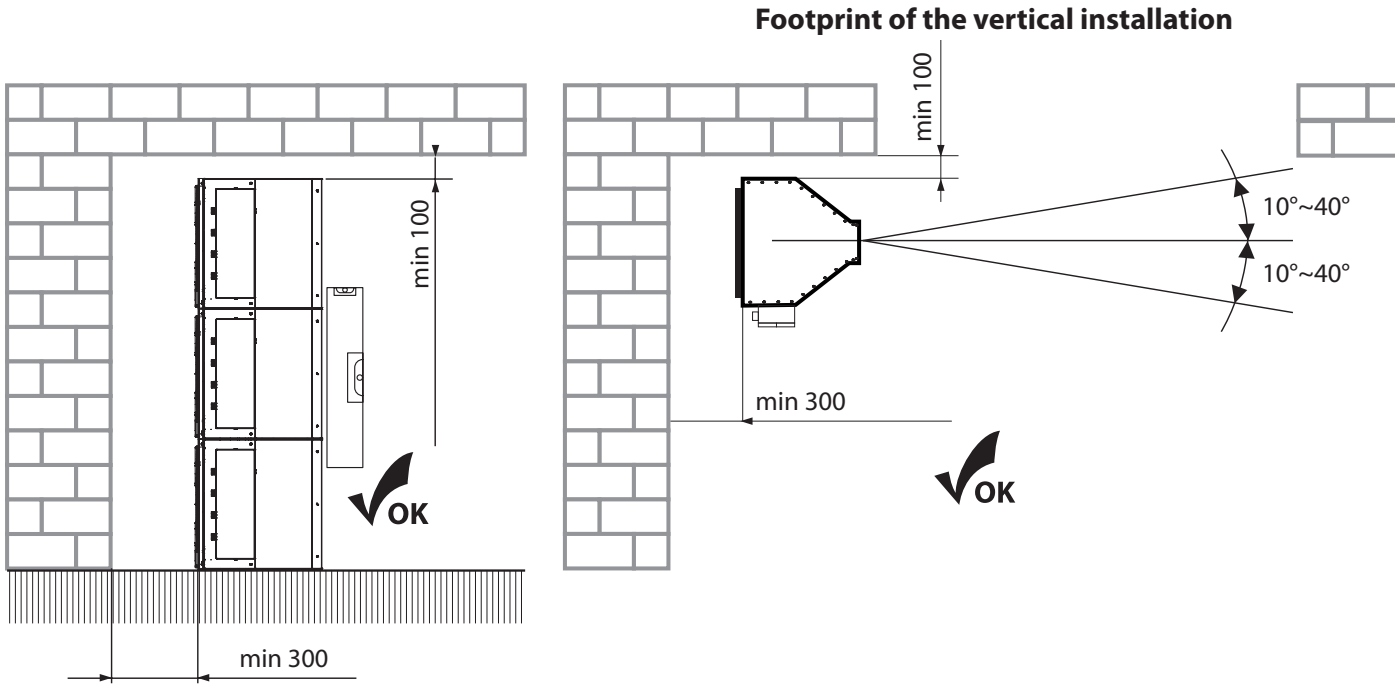


- The curtain must be levelled in the horizontal plane!
- Must be operated in covered and dry indoor areas with an ambient temperature between +5°C and +35°C and a relative humidity of up to 80%
- The air curtain is not designed to transfer air containing flammable or explosive mixes, chemical fumes, coarse dust, soot, fats, poisons or disease producing germs, etc. For example car washes, fuel storage depots, areas where farm animals are kept.





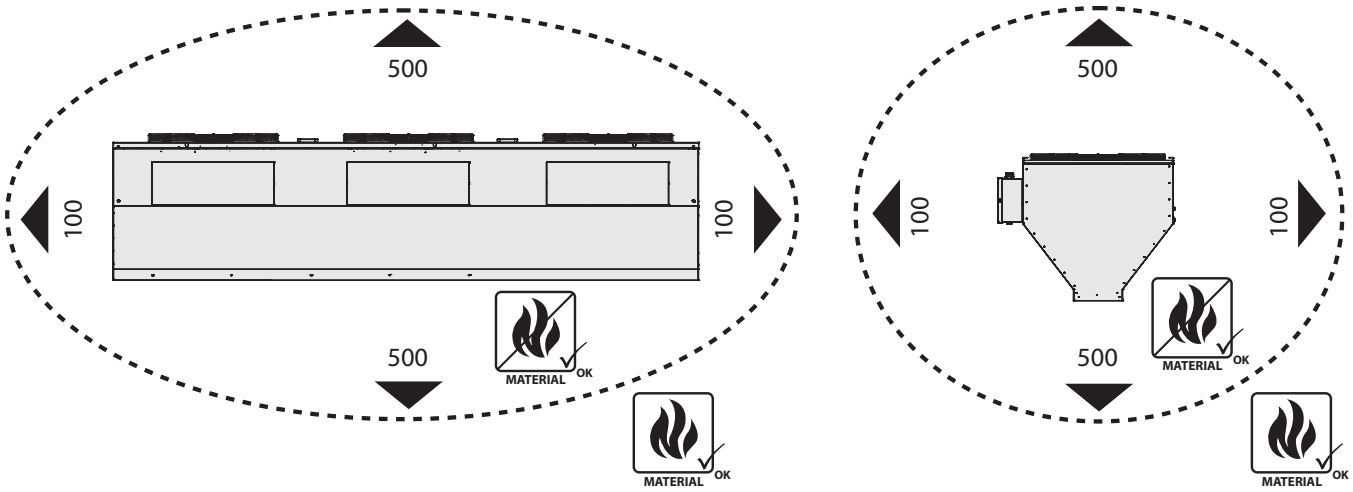
6.1-2 Build-in dimensions – vertical installation



- The curtain must be levelled in the vertical plane!
- The air curtain must stand on a flat, hard surface.
- Must be operated in covered and dry indoor areas with an ambient temperature between +5°C and +35°C and a relative humidity of up to 80%
- The air curtain is not designed to transfer air containing flammable or explosive mixes, chemical fumes, coarse dust, soot, fats, poisons or disease producing germs, etc.
- The air curtain must be installed with counterblow (turned against the direction of airflow in the doorway). The size of the angle of turning will be determined against the situation in the place of installation. The scope of the angle of turning can be from about 10° to 40° from the plane of the door/gate.

Footprint of the vertical installation

6.1-3 Separation distances



⚠

Only non-flammable materials (which do not burn, glow or char) or not very flammable materials (do not burn but mostly glow - e.g. plasterboard) may be located within 100 mm of from the air curtain. These materials **must not, however, cover the suction or the exhaust openings!**

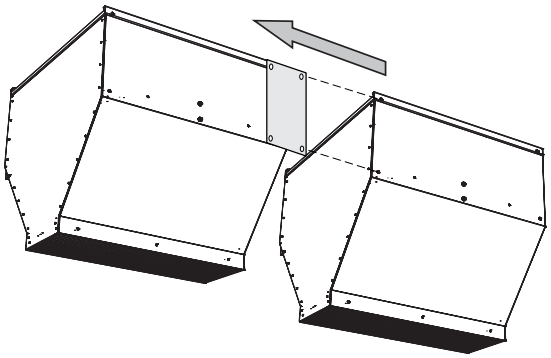
For the safe distance of the air curtain with electric heating from building structures and items from flammable materials the following applies:

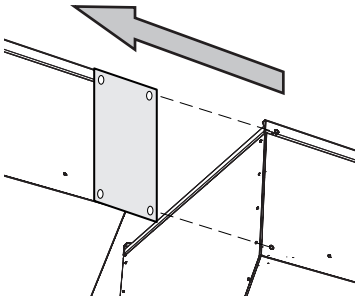
- The safe distance for flammable materials in the direction of the main air flow (i.e. in front of the suction grill and behind the exhaust slit) is **500 mm.**
- The safe distance for flammable materials above the air curtain is **500 mm,**
- The safe distance for flammable materials in other directions is **100 mm.**

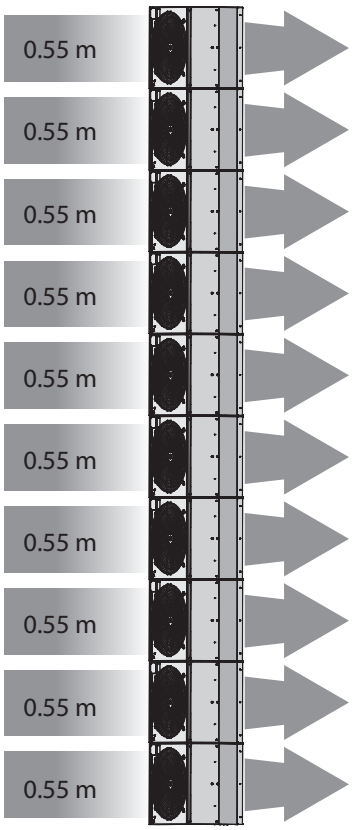
6.1-4 Modular curtain configuration

From the individual modules of the **INDESSE** *Industry* curtains it is possible to configure it, based on length, air power, or heating power requirements for the unit. If high installation is needed when installing it is neccessary to take into account the weight, which will stand on the lower curtain.

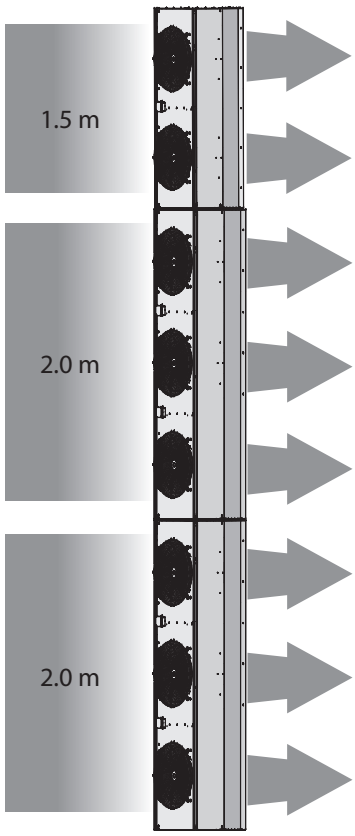
The individual modules are connected using connecting steel plates. Two steel plates are included with every **INDESSE** *Industry* curtain.







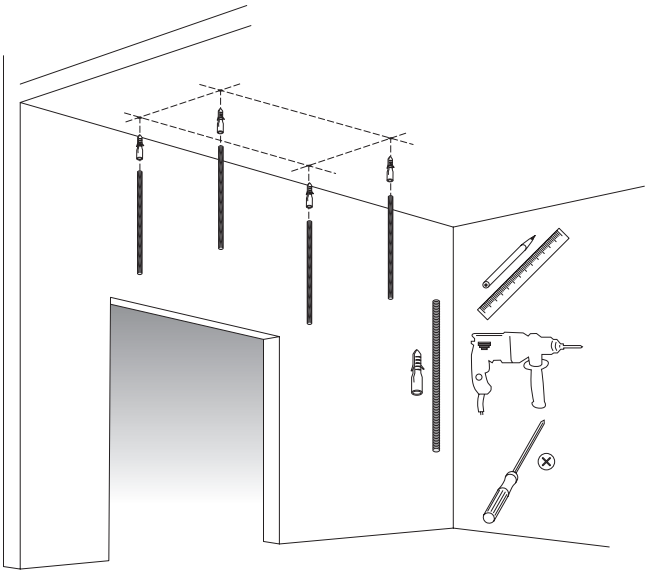
Vertical assembly 5.5m
(10 x VCP-03-055-EO)
5.5m=32 500m3/h

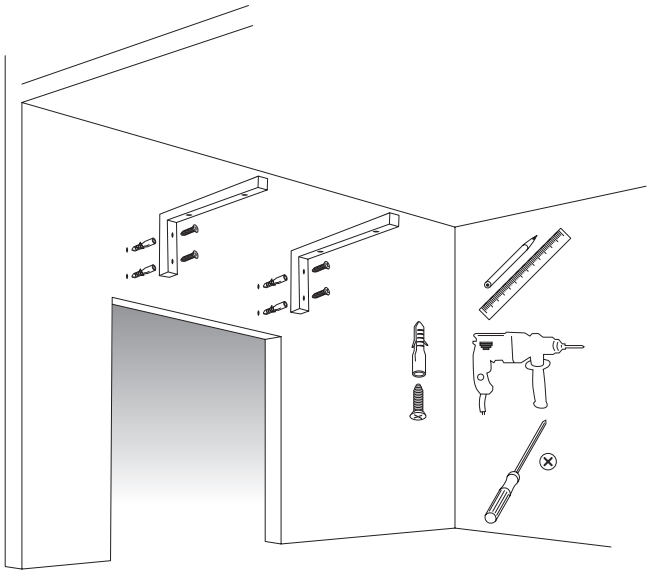


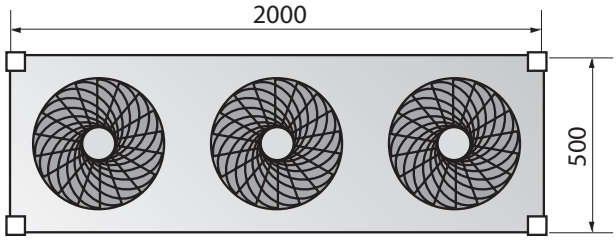
Vertical assembly 5.5m
(2 x VCP-03-200-EO and 1 x VCP-03-150-EO)
5.5m=26000m3/h

6.2 HORIZONTAL MOUNTING OF THE CURTAIN

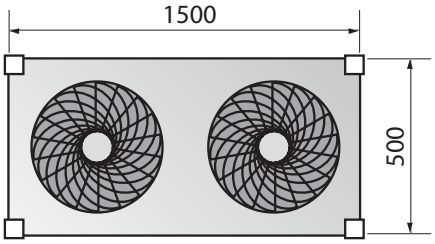
6.2-1 Measure out the location of the horizontal installation



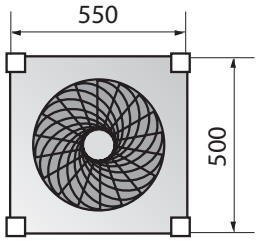




VCP-03-200



VCP-03-150



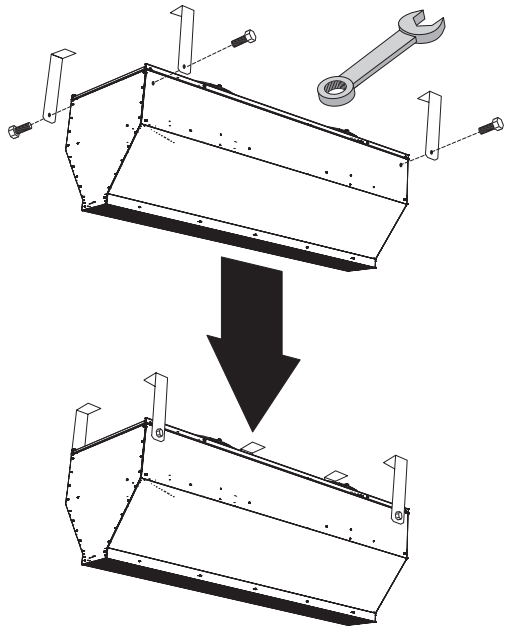
VCP-03-055

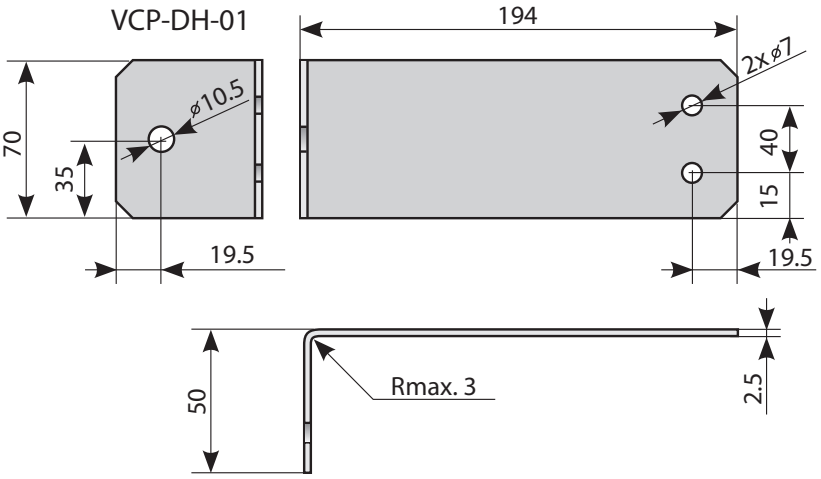
⚠ **The suspension must bear the weight of the curtain!** ⚠

Curtain	Weight (kg)
VCP-03-055-T..	23
VCP-03-055-H..	23
VCP-03-055-E..	23
VCP-03-055-S..	21
VCP-03-150-T..	49,5
VCP-03-150-H..	49,5
VCP-03-150-E..	49,5
VCP-03-150-S..	47
VCP-03-200-T..	65,6
VCP-03-200-H..	65,6
VCP-03-200-E..	65,6
VCP-03-200-S..	63,6

6.2-2 Secure the suspension brackets to the curtain

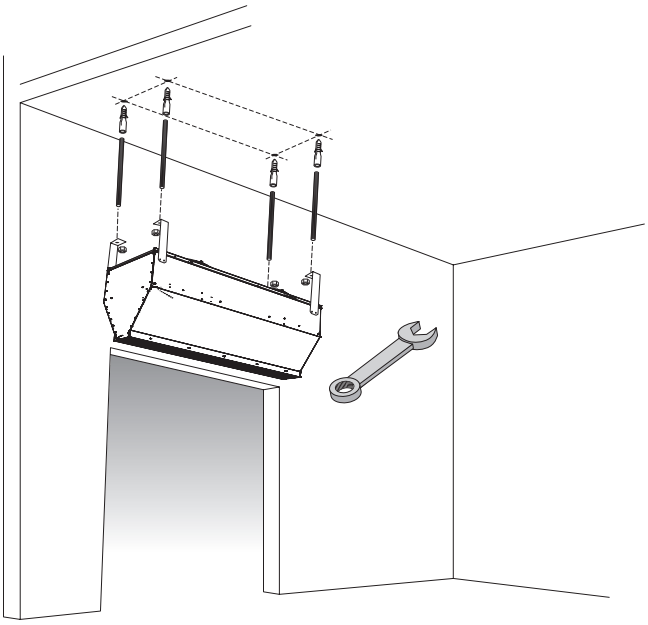
The suspension brackets are an optional accessory to the curtain and need to be ordered.

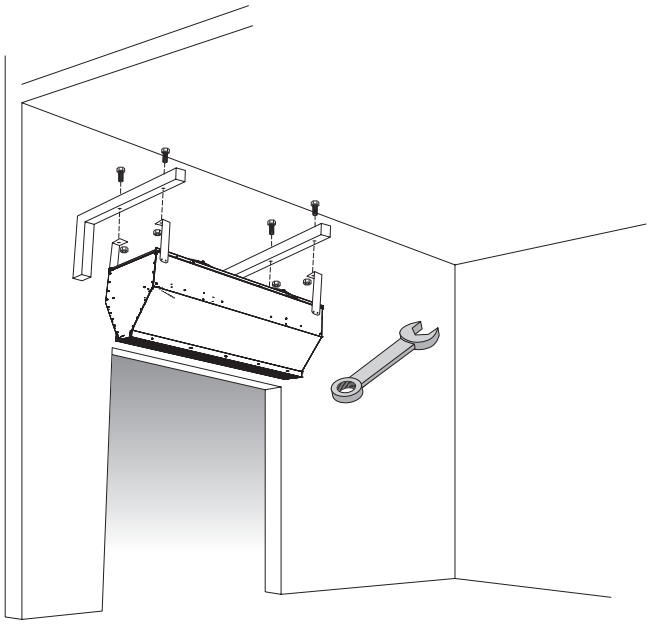




6.2-3 Fasten the curtain to the suspension frame/threaded rods

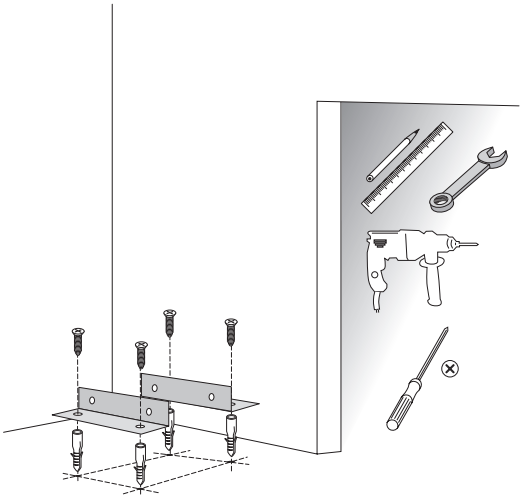
Due to the weight of the curtain it is necessary to use appropriate lifting equipment to lift it. (forklift, etc.).





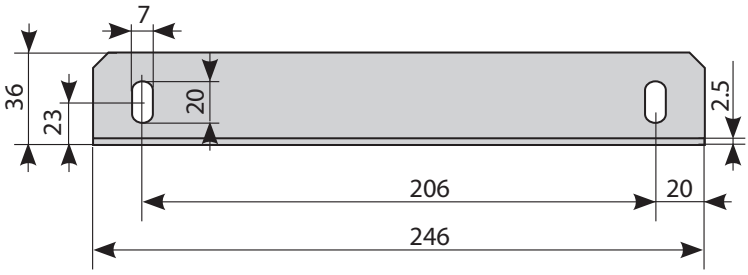
6.2 VERTICAL MOUNTING OF THE CURTAIN

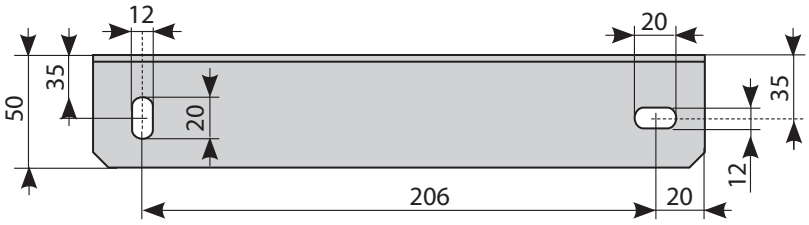
6.3-1 Measure and mark out the installation location
Measure and mark out the installation location of the anchor mounts (optional accessory)



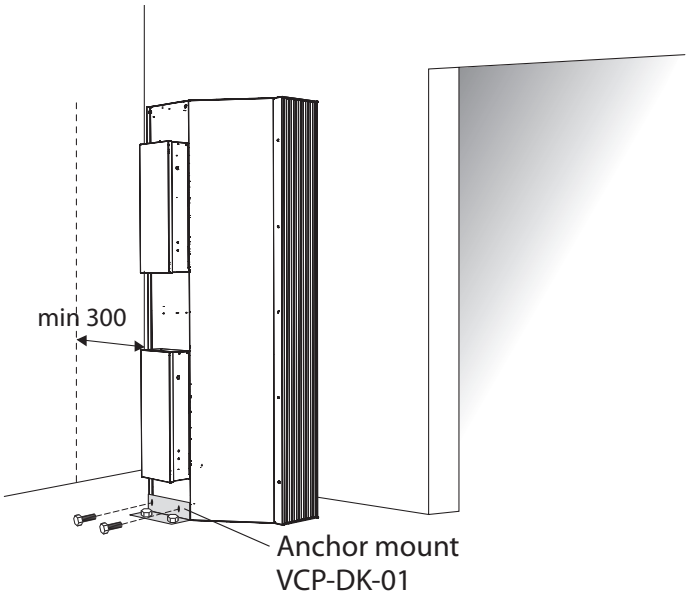
- if the air curtain is higher than 4 meters, we recommend to fix it at its upper section (not delivered by 2VV company).

VCP-DK-01



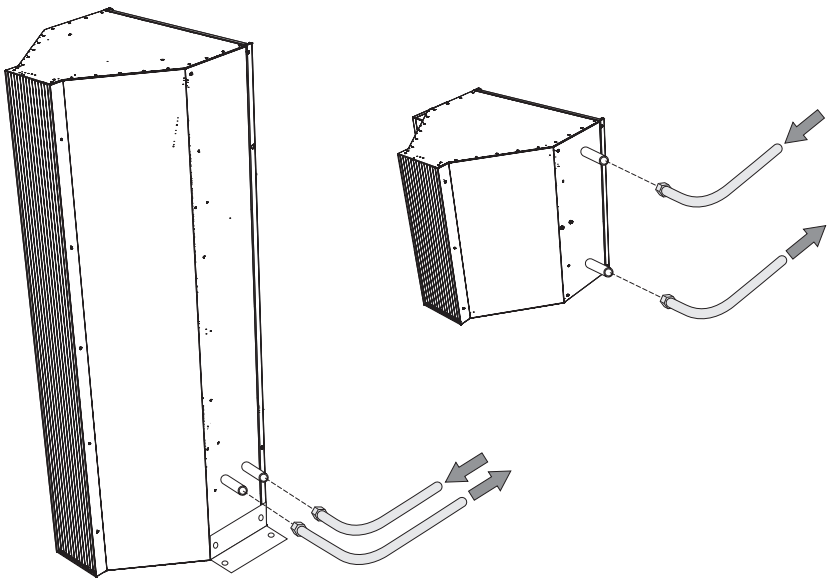


6.3-2 Secure the curtain to the anchor mounts



6.4 CONNECT THE WATER INLET AND OUTLET HOSES

VCP-…..TP (HP, TO, HO)

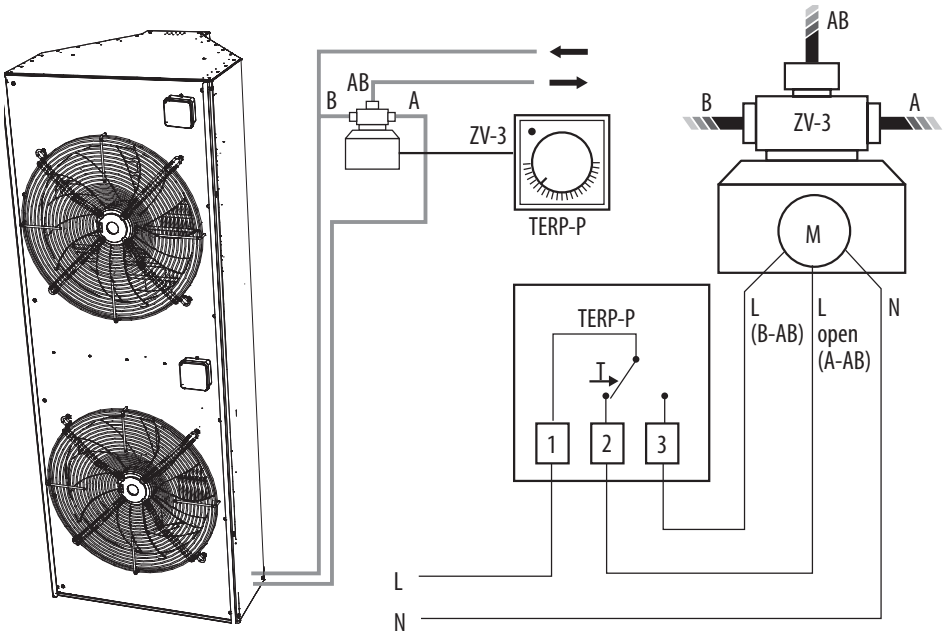


- Flexible hoses with connection **G3/4”**
- The connection and pressure tests of the heater must be carried out by a person qualified in the field of plumbing, who must at all times adhere to the valid norms and regulations of the given country.
- The heat exchanger is designed to be used with water that must have the **maximum temperature of +100°C (configuration TO and TP) and +130°C (configuration HO and HP) and a maximum pressure of 1.6 MPa.**
- To the inlet and outlet of the water heat exchanger we recommend the installation of stop valves for the option of shutting of the supply of water.
- The heat exchanger has terminals with external 3/4" threads.
- Curtains with the designation **TP** and **HP** are equipped with an anti-frost protection sensor.

6.5-8 Anti-frost protection sensor PO

6.4-1 Regulation of the water heat exchanger with a three way valve ZV-3

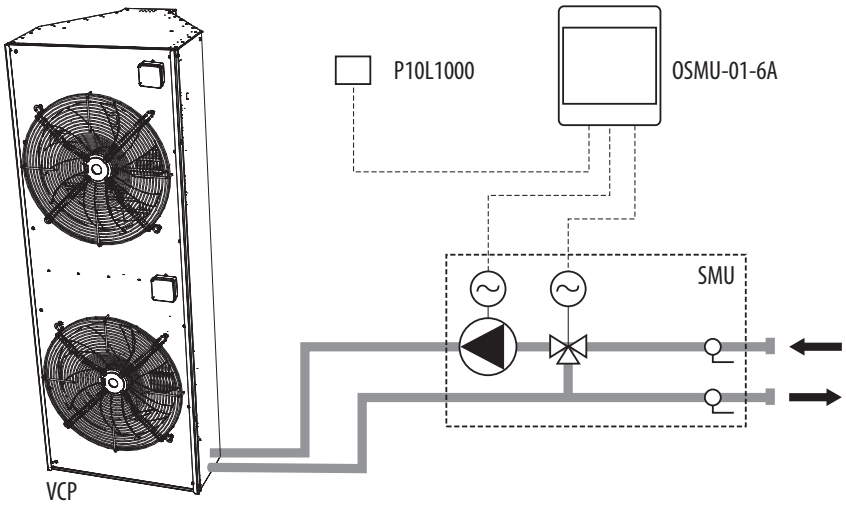
The regulation of the water heat exchanger must be carried out separately.



- A detailed description of the regulation of the water heat exchanger using a three way valve (ZV-3) including its connection can be found in the manual for the ZV-3 three way valve.

6.4-2 Regulation of the water heat exchanger with a SMU mixing point

The regulation of the water heat exchanger must be carried out separately.



A detailed description of the water heat exchanger using a mixing point (SMU) including its connection with the controller of the mixing point (OSMU) can be found in the manual for the mixing point SMU.

6.5 ELECTRICAL WIRING

⚠

- **The electrical connection of the air curtain must be carried out on the basis of a professional project by a qualified electrical project engineer.**
- **The installation may only be carried out by a worker with professional electrical qualifications. All valid national regulations and directives must be adhered to.**
- **The electrical diagrams on the product have a higher priority than the diagrams included in this user's manual!**
- **Before installation, check that the labelling of the clamps corresponds to the labelling on the electrical connection diagram. If in any doubt contact your supplier and under no circumstances connect the air curtain!**
- **Before carrying out any work inside the air curtain, the main power input must be disconnected!**
- **If the product is connected to anything other than an original control system, it is necessary for the connection of the regulation and measurement element to be carried out by the company, which supplied this system.**

🔍

- The electrical **parameters are included on the rating label**, which is located on the case of the air curtain.

Curtain designation			
U	= Voltage	I	= Total current
f	= Frequency	P	= Power
n	= Revolutions	m	= Weight
ph	= Phase	IP	= IP Protection class
av	= Air power	ver	=
Serial number			

- The air curtain must be **protected by an appropriate circuit breaker based on its electrical parameters!** For reasons of safety **it is not recommended to use a larger circuit breaker than is necessary!**
- **A main switch disconnecting all the poles of the power supply** must be included in the mains power supply connection.
- The electrical protection class of the curtain is **IP20** (**configuration EO**) a **IP44** (**configuration TO, TP, HO, HP, SO**).

6.5-1 Power supply to the fans

Table for the number of fans in the curtain

Type of curtain	Fan	Power source
	[pcs]	[V/A]
VCP-03-055-EO	1	400/0.65
VCP-03-150-EO	2	400/1.30
VCP-03-200-EO	3	400/2.00

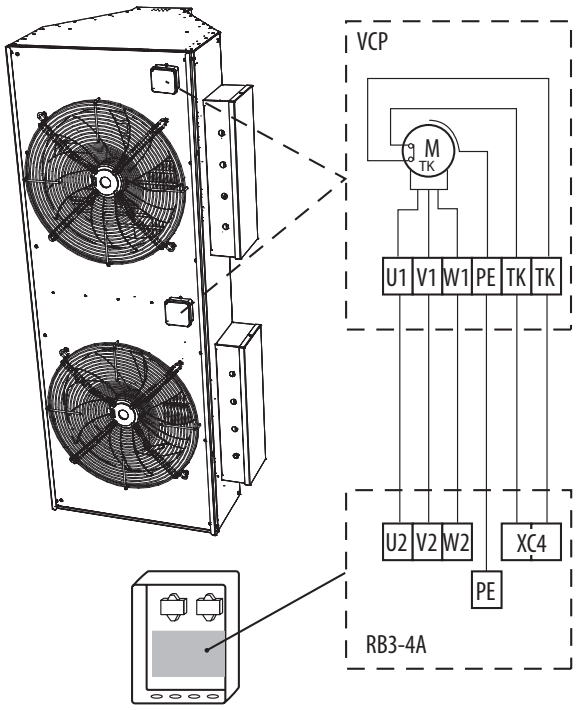
⚙

- **INDESSE** *Industry* air curtains are equipped with fans with voltage regulation of rotation speed.
- The fan motors are equipped with thermal contacts, which can be used to turn off the aperture in the event of motor's overheating.

⚠

The cable supplied with the air curtain cannot be used for direct connection of the module with another air curtain. An external terminal box must be used, or the dimensions of the connection cable must be changed!

6.5-2 Connect the control unit RB3-4A:



RB3-4A

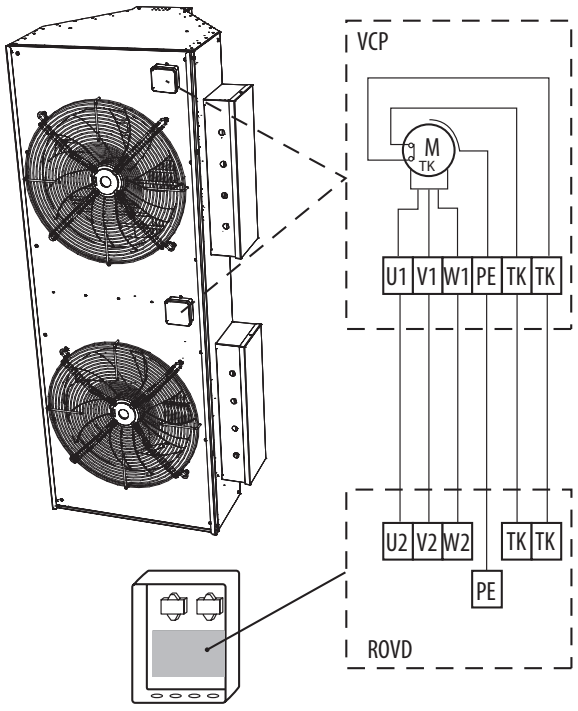
Before installing the control units carefully read the **Installation manual for the RB3-4A**, where you will find all instructions for the correct connection of the RB3-4A to the **INDESSE** *Industry* curtain.

Table for the maximum number of fans VCP on the RB3-4A

RB Type	Fan [pcs]
RB3-4A	6

The cable supplied with the air curtain cannot be used for direct connection of the module with another air curtain. An external terminal box must be used, or the dimensions of the connection cable must be changed!

6.5-3 Connect the rotation speed regulator ROVD:



ROVD

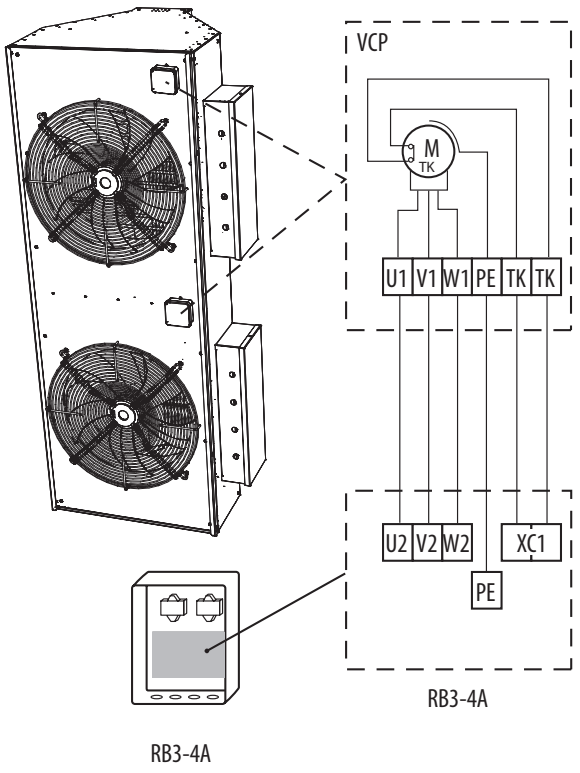
Before installing the rotation speed regulator carefully read the **Installation manual for the ROVD**, where you will find all instructions for the correct connection of the ROVD to the **INDESSE** *Industry* curtain.

Table for the maximum number of fans VCP on the ROVD

ROVD type	Fan [pcs]
ROVD..2	3
ROVD..4	6
ROVD..7	10

The cable supplied with the air curtain cannot be used for direct connection of the module with another air curtain. An external terminal box must be used, or the dimensions of the connection cable must be changed!

6.5-4 Connect the rotation speed regulator ROD:



Before installing the rotation speed regulator carefully read the **Installation manual for the ROD**, where you will find all instructions for the correct connection of the ROD to the **INDESSE** *Industry* curtain.

Table for the maximum number of fans VCP on the ROD

ROD type	Fan
	[pcs]
ROD..2	3
ROD..4	6
ROD..7	10
ROD..9	13

Connection to terminals XC1 is not possible with the model RODA.

The cable supplied with the air curtain cannot be used for direct connection of the module with another air curtain. An external terminal box must be used, or the dimensions of the connection cable must be changed!

6.5-5 Power supply to the electric heater:

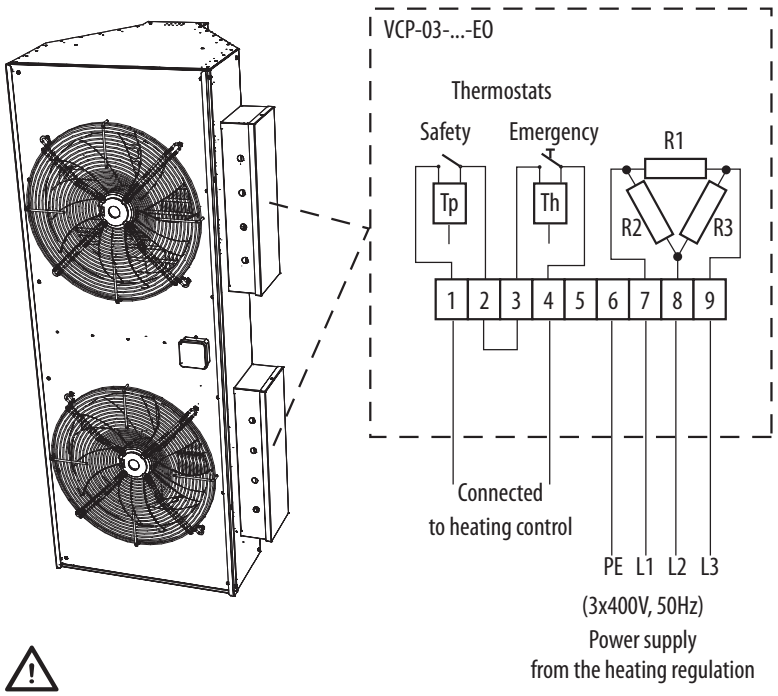


Table for the number of heaters in the curtain

Type of curtain	Heaters	Power source
	[pcs]	[V/A]
VCP-03-055-EO	1	400/9
VCP-03-150-EO	2	400/18
VCP-03-200-EO	3	400/27

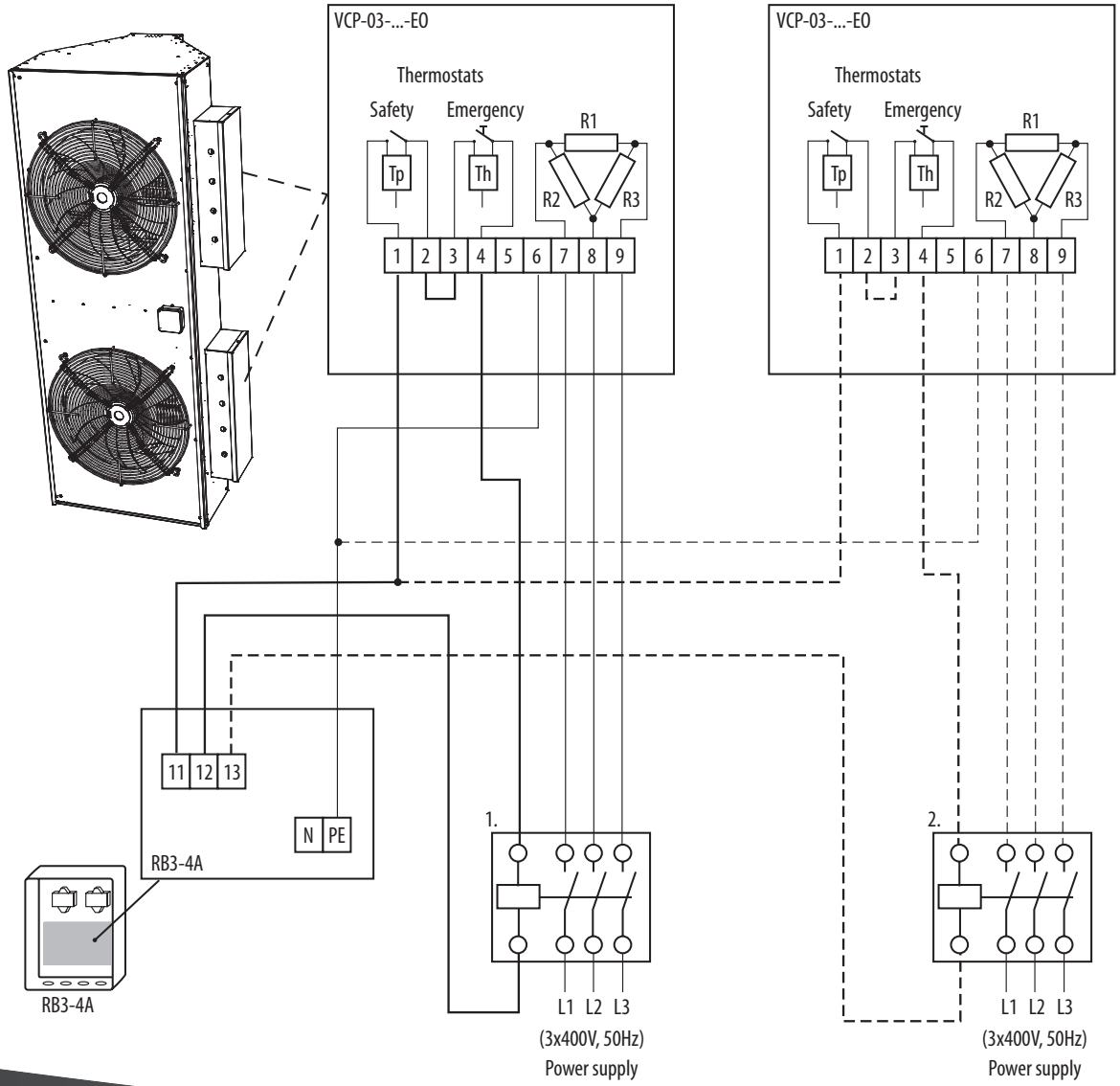
The minimum dimensions of the supply cable of an individual heater are 4x1.5mm².

- The operating and emergency thermostat of the given heater must be connected to the control circuit so that in the case that overheating occurs the heating elements are disconnected from the electrical power supply. The thermostats must be connected in series.
- If more heaters are connected to one supply cable, the dimensioning of the cable must be adjusted to the total electrical current.

- The circuit of the electric heater must be **protected by an appropriate circuit breaker based on the electrical parameters of the connected heaters.** For reasons of safety **it is not recommended to use a larger circuit breaker than is necessary!**
- **A main switch disconnecting all the poles of the power supply** must be included in the mains power supply connection.

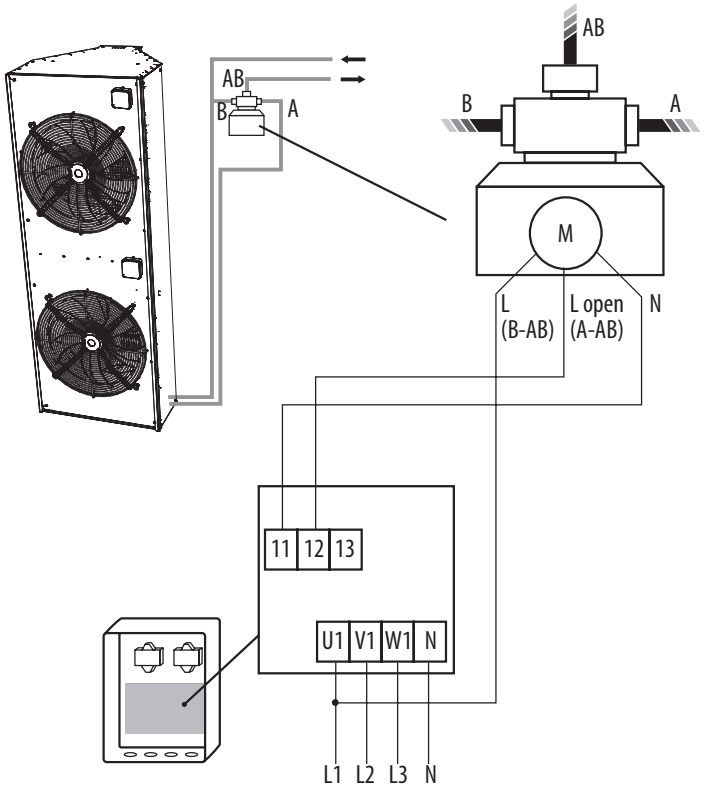
6.5-6 Regulation of an electric heater using the RB3-4A (2 levels):

- The RB3-4A makes it possible to regulate electric heating at two levels. Each level switches contactors that are connected to it.
- The maximum number of contactors between the control clamps of the respective heating level (clamps 11, 12 or 11, 13) is two.
- The control voltage for heating between clamps 11 and 12 (1st heating level) or 11 and 13 (2nd heating level) is 230V AC.
- Into the control circuit of the contactors it is possible to include a room thermostat for the regulation of the respective temperature in a room. The thermostat will interrupt the control signal of the contactor and it will disconnect the power to the heater.



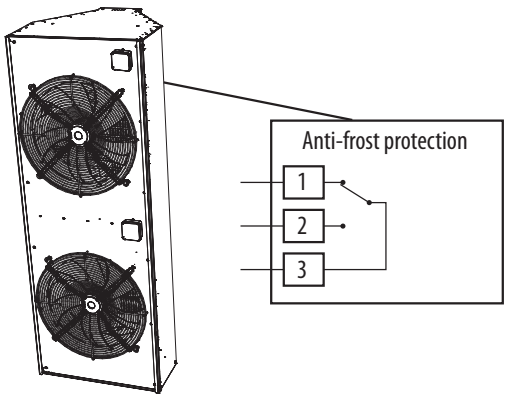
- **Into the control circuit of a contactor controlling a respective heater, there must always be an operating and an emergency thermostat connected to a given heater. The thermostats must be connected in series.**
- The contactors must be rated for the sum of the currents of the heaters that are connected to them.
- A maximum of two contactors may be connected for every RB output for the control of heating.
- **A main switch disconnecting all the poles of the power supply must be included in the mains power supply connection!**

6.5-7 Regulation of the water heater using RB3-4A and ZV-3 (On/Off)



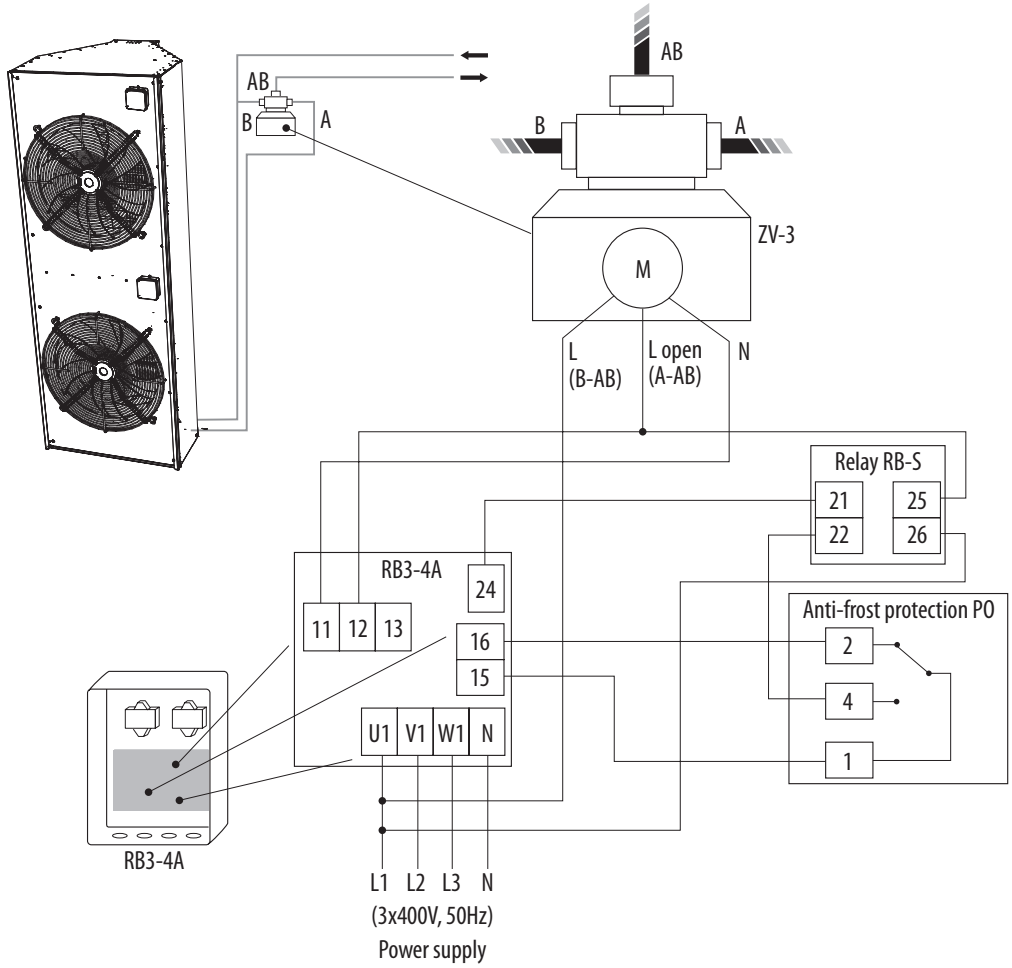
On to the opening phase conductor (L open) of a three way valve ZV-3 it is possible to connect a room thermostat TER-P, which will interrupt the signal from the regulation of the heating depending on the temperature in the area.

6.5-8 Anti-frost protection sensor PO (curtains VCP...TP, VCP...HP)



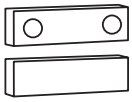
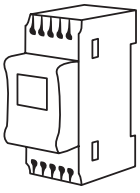
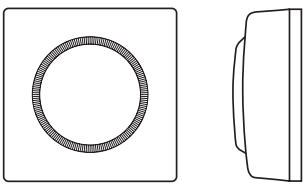
The recommended connection of the anti-frost protection PO is a control unit RB3-4A, RB-S and ZV-3.

6.5-9 Connection of an anti-frost protection sensor PO to the RB3-4A (curtains VCP...TP, VCP...HP)



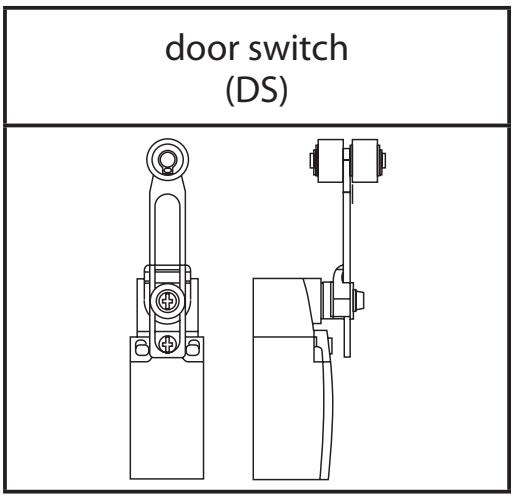
6.5-10 CONNECT THE EXTERNAL CONTROL ELEMENTS (optional accessories)

VCP + RB
A curtain regulated by the control unit RB3-4A permits the connections of:

door switch DK-1 (DS)	timer switch SH-TM-848	room thermostat TER-P	anti-frost protection PO
			

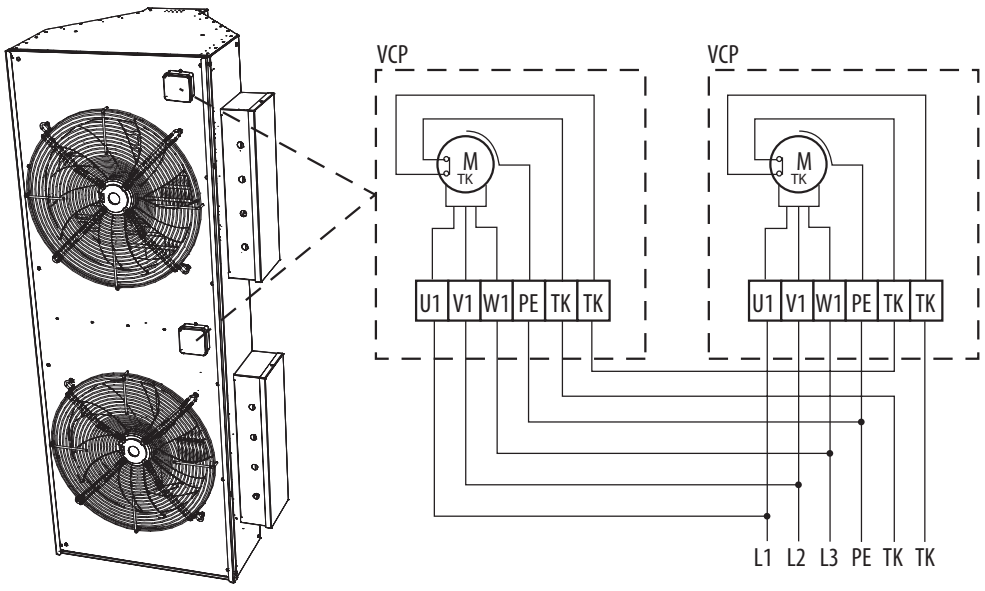
VCP + ROVD
A curtain regulated by the rotation speed regulator ROVD does not permit other accessories to be connected.

VCP + ROD
A curtain regulated by the rotation speed regulator ROVB permits the connection of:



6.6 CHAINING OF CURTAINS

6.6-1 Chaining of curtain fans VCP



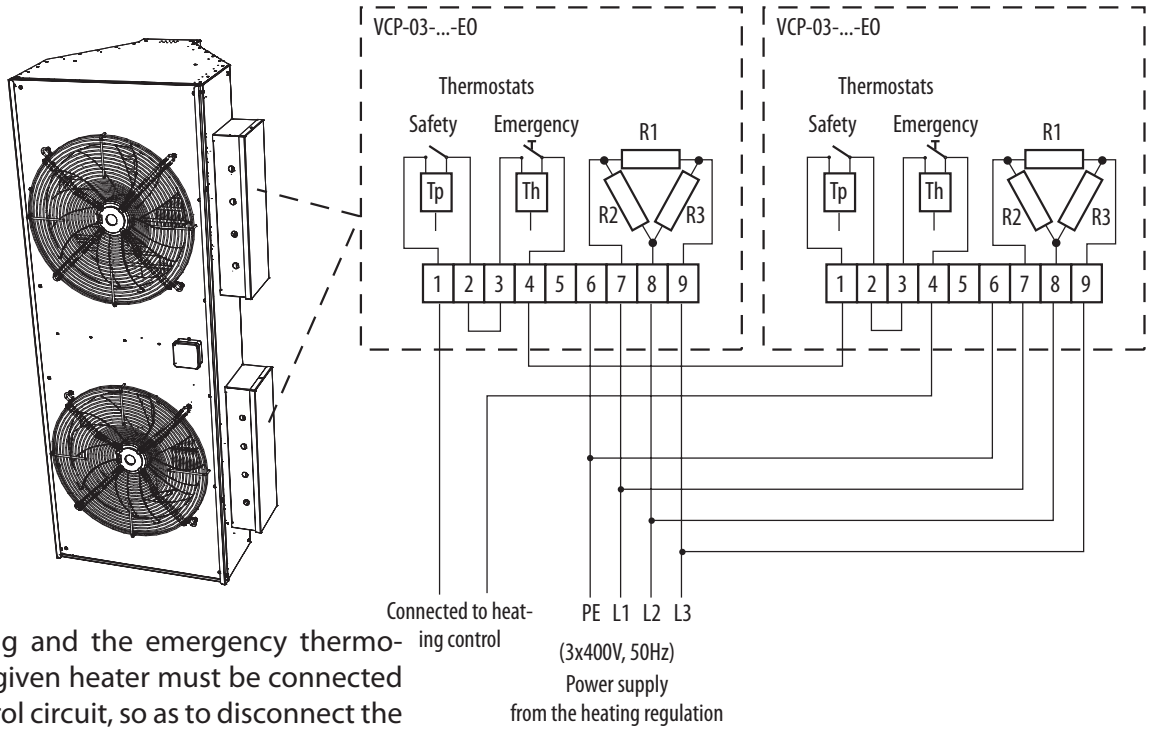
(3x400V, 50Hz)
Power supply from the rotation speed regulator

To be able to use thermocontacts if chaining
the curtains you have to connect them into the series.

⚠

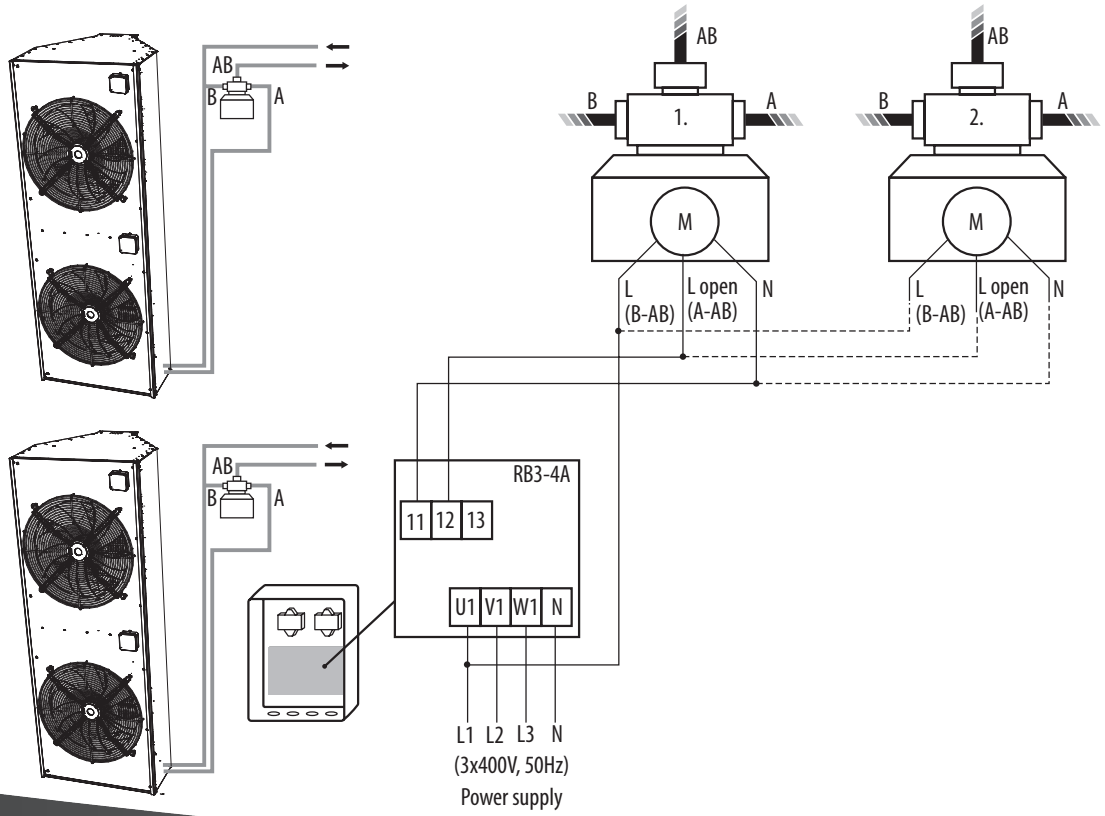
The cable supplied with the air curtain cannot be used for direct connection of the module with another air curtain. An external terminal box must be used, or the dimensions of the connection cable must be changed!

6.6-2 Chaining of curtain heaters VCP



- The working and the emergency thermostat of the given heater must be connected to the control circuit, so as to disconnect the heating units from the power supply in the case of overheating. The thermostats must be connected in series.
- If more heaters are connected to one supply cable, the dimensioning of the cable must be adjusted to the total electrical current.

6.6-3 Chaining of water regulation ZV-3 (VCP-03-..-TO, TP, HO, HP)



7. SWITCHING ON FOR THE FIRST TIME

Before putting the curtain into operation:

- Check whether any tools or other items that could damage the curtain have been left in the curtain.
- Check whether the electrical power supply is properly connected and if the regulation and heating water connections are properly connected.
- Check that the curtain is properly in the case.
- Thoroughly study the manuals of all the components used

Before putting the curtain into operation, thoroughly read all the manuals of all the components used in the system.

7.1 Test the regulation of the fan

- Test the correct rotation direction of the fan
- Test the correct range of rotation speed regulation
- Test the behaviour of the fan when using external control elements

If the rotation direction is reversed, swap two phase power conductors of the fan.

7.2 Test the regulation of electric heating

- Test the correct range of the heater regulation
- Test the behaviour of the heater when the fan is turned off
- Test the behaviour of the heater when using external control elements

7.3 Test the regulation of water heating

- Test the correct range of the heater regulation
- Test the behaviour of the heater when the anti-frost protection is activated
- Test the behaviour of the heater when using external control elements

8. CONCLUSION

If anything is unclear or you have questions, do not hesitate to contact the sales or technical support department.

Before starting operation or maintenance, thoroughly study the part **Safe use of air curtains**, where you will find all the instructions for the safe and correct use of the product.

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